

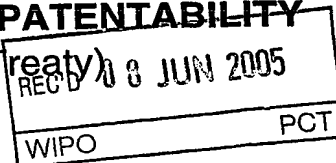
## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)





Applicant's or agent's file reference 030094PCT	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/JP2004/008657	International filing date (day/month/year) 14.06.2004	Priority date (day/month/year) 01.07.2003	
International Patent Classification (IPC) or national classification and IPC F02M27/02, F02M31/08, F01N5/02, F02G5/02, B01D19/00, C10G7/00, C10G31/00			
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA et al.			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☐ sent to the applicant and to the International Bureau a total of sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand  27.12.2004	Date of completion of this report  09.06.2005
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer V. 20EST Telephone No. +31 70 340- 3796  

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-16 as originally filed

**Claims, Numbers**

1-15 as originally filed

**Drawings, Sheets**

1/10-10/10 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	3,4,11,12,14,15
	No: Claims	1,2,5-10,13
Inventive step (IS)	Yes: Claims	3,4,11,12,14,15
	No: Claims	1,2,5-10,13
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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Re Item V.

1. The following documents are referred to in this communication:

D1 : EP-A-0.441.401

D2 : US-A-4.606.319

2. **INDEPENDENT CLAIM 1**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of the independent claims 1 and 2 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parenthesis applying to this document):

For claim 1:

*A fuel fractionation method for an internal combustion engine comprising the steps of:*

*applying an operation for promoting a fractionation of a fuel of the internal combustion engine (1) to a fractionation passage (32) while making the fuel flow to the fractionation passage, thereby fractionating the fuel into a gas phase fuel and a liquid phase fuel within the fractionation passage;*

*conducting the fractionated gas phase fuel and the fractionated liquid phase fuel to a branch point (24) of the fractionation passage; and separating the gas phase fuel and the liquid phase fuel to an upper branch passage (25) and a lower branch passage, respectively due to gravity.*

(see column 7, line 50- column 8, line 4; figure 9)

For claim 2:

*A fuel fractionation apparatus for an internal combustion engine comprising: a fractionation passage (32) which is connected to a fuel supply system of the internal combustion engine (1) and reaches a branch point (24) of a terminal end through a fractionation section to which a fractionation promoting effect of a fuel is applied;*

*a liquid phase branch passage which is branched to a lower side from the branch*

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*point; and*

*a gas phase branch passage (25) which is branched to an upperside than the liquid phase branch passage from the branch point.*

(see column 7, line 2- 49; figure 9)

This subject matter of claims 1 and 2 can also be retrieved from document D2.

**3. DEPENDENT CLAIMS 5-10, 13**

Dependent claims 5-10 and 13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and inventive step (Article 33(2) and (3) PCT), because the subject matter of these claims can also be retrieved from D1 and/or D2